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PRINCIPAL INVESTIGATOR: Paula Chapman, Ph.D.

CONTRACTING ORGANIZATION: RAND CORP  
P.O. Box 1215  
Santa Monica, CA 90406-1215  
Toll Free 1-866-362-7462  
FL 33612

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14. ABSTRACT  This study forges the existing gap in the literature on military health care providers by focusing solely on Combat Medics. Medics serve a vital role in the OEF/OIF theatres, yet, there is a paucity of research on Combat Medics. The overall purpose of the study was to conduct a behavioral health assessment among Combat Medics, to determine what factors account for resiliency among combat medics, and if resiliency is static, wanes, or cycles over time. The study incorporates a mixed-methods, prospective longitudinal design utilizing US Army Combat Medics. Findings can assist educators and leaders of Combat Medics to better prepare future Combat Medics for service in combat zones. This report addresses findings from Year 2. While few differences were noted between Year 1 and Year 2,					
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## EXECUTIVE SUMMARY

Of the 841 cases from Year 1, 288 responded to the Year-2 survey. This reflects a response rate of 34.3% for the Year-2 survey. While Year 2 attrition was comprised mostly of those currently deployed, no significant differences in Year-2 survey response by Year-1 deployment group were observed. A natural concern when conducting a study that spans multiple time-points is whether or not those who responded to the survey differ from those who did not. The medics that responded to the Year-2 survey tended to be higher in rank, more educated, older and married. Importantly, no significant differences in Year-2 survey response were observed based on Year-1 mental health outcomes. In other words, those who met the criteria for a mental health issue were not (significantly) more or less likely to respond to the Year-2 survey.

In terms of behavioral health, no significant differences in stress- or depression-related functional issues were observed between deployed and non-deployed medics in Year-2. No significant differences in the utilization of a mental health professional were observed between the two deployment groups in Year-2.

In terms of mental health issues, we find no significant differences between the two deployment groups in terms of meeting the criteria for depression or PTSD. All findings related to mental health issues remained the same when logistic regression was utilized to control for demographic characteristics. Of course, these findings are, in a way, dependent upon our choice of definition of depression and/or PTSD. The definitions utilized in this study are consistent with those found in other major studies. For depression, a cut-off score of 10 was chosen, primarily on the grounds of a statement given by the creators of the PHQ-9: “If a single screening cutpoint were to be chosen, we currently recommend a PHQ-9 score of 10 or greater, which has a sensitivity for major depression of 88%, a specificity of 88%, and a positive likelihood ratio of 7.1.” The criteria for PTSD was defined as a PCL sum score at or above 50 and a positive response using the DSM scoring criteria for the PCL. This is the same definition of PTSD utilized in the MHAT studies.

With the exception of the item “My visit would not remain confidential,” medics who met the criteria for either depression or PTSD, in Year-2, were twice as likely (or greater) to report concerns related to stigmas and barriers to care, compared to those who did not meet the criteria. The two most commonly endorsed barriers to care among all Year-2 medics were difficulty scheduling an appointment and difficulty getting time off, while the two most common stigmas endorsed were “members of my unit might have less confidence in me” and “my unit leadership might treat me differently”. These same four items remained the most commonly endorsed stigmas and barriers to care among all of the medics who participated in both Year 1 and Year 2 survey. In the first year of the study, medics who met the screening criteria for either depression or PTSD had significantly greater endorsement across all stigmas and barriers to care, compared to those who did not meet

the criteria. The same behavior—in terms of significance—was observed in Year-2, with the exception of the items “I don’t know where to get help” and “My visit would not remain confidential.”

The risk factors for depression among Year-1 deployed medics included mental health service utilization, age, and family concerns; while protective factors included marital status (married), education (more education), personal morale (higher morale), and dispositional resilience. Among this same group, the risk factors for PTSD included mental health service utilization, deployment concerns, and family concerns; while protective factors included dispositional resilience and NCO perceptions. Among Year-1 medics that had never been deployed, the risk factor for depression was family concerns, while the protective factor was personal morale (higher morale). For PTSD, the risk factor was mental health service utilization, and the protective factor was dispositional resilience. The results for the second year of the study display a somewhat different pattern. The risk factor for depression among the deployed medics was mental health service utilization, and the protective factor was dispositional resilience. The risk factors for PTSD among the deployed medics in Year-2 were deployment concerns and combat experiences; the protective factors were deployment perceptions and confidence. Among non-deployed medics in Year-2, the risk factor for depression was family concerns; the protective factors were personal morale (higher morale) and dispositional resilience. For stress, the risk factors were grade/rank (higher rank) and mental health service utilization; the protective factor was personal morale (higher morale).

The Year-2 responses reflect a similar pattern in terms of deployment training, suicide prevention and stress training. However, combat experiences changed bit, which is probably a reflection of the sample. Compared to Year 1, in Year 2, percentages were smaller for firing weapon, providing aid to the wounded, and seeing injured women or children with a higher percentage reported killing the enemy and saving the life of a fellow Soldier/marine. Finally, information on post-battle experiences was also collected, with results lower in Year 2 than in Year 1.

## INTRODUCTION

This study attempts to forge the existing gap on military health care providers by focusing solely on Combat Medics. Combat Medics serve a vital role in the OEF/OIF theatres, constantly placing themselves in danger in order to assist a fallen comrade. Yet, there is a paucity of research on Combat Medics generally, and factors accounting for their wellbeing, particularly. The overall purpose of the study is to conduct a behavioral health assessment among Combat Medics, to determine what factors account for resiliency among combat medics, and if resiliency is static, wanes, or cycles over time. By investigating resiliency, educators and leaders of Combat Medics can better prepare future Combat Medics for service in combat zones. The study incorporates a mixed-method, prospective longitudinal design utilizing three groups of Combat Medics. Group 1 consists of Combat Medics who recently returned from deployment to OEF/OIF theatre within the past three months; Group 2 includes Combat Medics who have not been deployed to OEF/OIF theatres within the past 12 months and Group 3 consists of Combat Medics who have never deployed to either Iraq or Afghanistan. From all data collected, we will create a model of resiliency to be tested in future studies. This Annual Report focuses on Year 2 results. *Significance*, here and throughout the entire report, is defined, in the conventional manner, as  $p < 0.05$ .

## **Activities Related to the Approved Statement of Work**

**Goal One: Start up Activities** Completed Nov 2009

**Goal Two: Generate Samples.** We had originally proposed to cluster sample among units stationed across Europe. However, this was not feasible due to the limited number of installations. Convenience sampling was utilized with the sample comprised of Soldiers at the following installation locations within Europe Regional Medical Command: Landstuhl Regional Medical Center, Heidelberg ERMHC Headquarters, Mannheim, Illsheim, Katterbach, Baumholder, Vilseck, and Vicenza.

**Goal Three: Baseline Quantitative Data Collection.** Year-1 data collection in Europe occurred in Nov 2009. However, the main BCTs from which to draw a deployed group had deployed back stateside. With their departure, the required sample size could not be met and required a contingency plan. The contingency plan consisted of utilizing Ft Hood as an alternative site. With their inclusion, enough medics were recruited to power the study. Medics from Ft. Hood were recruited if they were 3-months post deployment. The largest number of Medics were recruited from the 1<sup>st</sup> Cavalry Division 2<sup>nd</sup> Brigade Combat Team, with other elements from 166<sup>th</sup> Aviation Brigade, 69<sup>th</sup> Air Defense Artillery Brigade, 36th Engineer Brigade, Soldier Development Center, 1<sup>st</sup> Medical Brigade, 62nd Expeditionary Signal Battalion, 504<sup>th</sup> Battlefield Surveillance Brigade, Carl R. Darnall Army Medical Center, 1st Battalion, 21st Field Artillery Regiment, 2<sup>nd</sup> Battalion 20<sup>th</sup> Field Artillery Regiment. First year Data collection with Ft Hood occurred in May 2010.

**Goal Four: Qualitative interviews.** Tulane University is the responsible party

**Goal Five: Qualitative Data Analysis.** Tulane University is the responsible party

**Goal Six: Year 2 Data Collection (Tampa).** Due to the inclusion of Ft. Hood into the sample, there are two phases of data collection each year. Phase 1 refers to the ERMHC group and Phase 2 refers to the Ft Hood group. Year-2 Phase 1 data collection for ERMHC occurred January 2011, and with 3 follow-ups, concluded March 2011. Year-2 Phase 2 data collection with Ft. Hood did not begin until August 2011, and after 3 follow-ups, concluded November 2011. The 3-month delay in Year-2 data collection was due to two issues: 1) BAMC IRB was closed out prior to obtaining approval from USUHS, resulting in a delay of 2.5 months. 2) The quantitative PI relied on USF IRB to send a Continuing Review reminder. This did not occur, requiring the study to be closed and then re-opened under another study number. This resulted in an additional 2 week delay. Data collection for Year 2 was completed May 2011. We experienced a significant blow to our research family with the passing of our military PI in Kabul in October of 2011, resulting in delays in delivering the data to the statistician for analysis.

**Goal Seven: Year 3 Data Collection (Tampa).** Year 3 data collection was completed May 2012. Quality control and cleaning were completed September 2012.

**Goal Eight: Complete Year 3 analysis and report findings.** Results for Year 3 are being written for inclusion in a final report.

## **Response Rates and Deployment Status**

A total of 841 surveys were collected in the first year of this study. Of the 841 cases, 288 responded to the Year-2 survey. This reflects a response rate of 34.3% for the Year-2 survey. When surveyed in Year-1, 30.4% (256) of the entire sample stated that they had never been deployed, while 69.6% (585) stated that they had been deployed within the previous 12 months. When surveyed in the second year of the study, 59.7% (172) stated that they had not been deployed within the past 6 months, while 28.8% (83) had been deployed; 33 cases (11.5%) did not provide a response to the deployment item. No significant differences in Year-2 survey response by Year-1 deployment group were observed ( $X^2 = 0.04$ ,  $p = 0.833$ ); 34.8% and 34.0% of those never deployed and deployed in Year-1, respectively, responded to the Year-2 survey. The Year-2 survey responses do, however, reflect a significant change in deployment status by year ( $S = 66.13$ ,  $p < 0.001$ ; McNemar's test).

The medics that responded to the Year-2 survey tended to be higher in rank ( $X^2 = 24.33$ ,  $p < .001$ ); medics with a Year-1 grade/rank of E5-E9 were 2.08 times more likely to respond to the survey compared to those with a grade/rank of E1-E4. Those who responded to the Year-2 survey also tended to be more educated ( $X^2 = 26.34$ ,  $p < .001$ ); response rates among the Year-1 educational attainment classes were 22.0% of "High-School or Less," 35.6% of "Some College," and 46.7% of "College Graduate." Responses also differed based on marital status ( $X^2 = 8.76$ ,  $p = 0.003$ ); medics who were married in Year-1 were 1.57 times more likely to respond to the Year-2 survey than those who were not married. The medics that responded to the Year-2 survey also tended to be older than those who did not ( $t(835) = 6.25$ ,  $p < .001$ ); the mean non-response age was 27.02, while the mean response age was 29.90. Response did not differ based on gender ( $X^2 = 0.06$ ,  $p = 0.809$ ) or race ( $X^2 = 0.80$ ,  $p = 0.671$ ). No significant differences in Year-2 survey response were observed based on Year-1 mental health outcomes.



## **Demographics**

Demographics are presented in Table 1 below. Deployment refers to being attached with a front line unit such as a BCT, where the majority of time is spent outside of the wire.

Table 1

*Demographic Characteristics by Year and Deployment Status*

Characteristic <i>n</i> (%)	Year-1		Year-2	
	ND	D	ND	D
<b>Grade/Rank</b>				
E1-E4	202 (78.91)	327 (55.99)	-	32 (38.55)
E5-E9	54 (21.09)	257 (44.01)	-	51 (61.45)
<b>Age</b>				
Mean (SD)	25.86 (6.01)	28.95 (6.41)	31.06 (6.50)	31.18 (6.91)
<b>Sex</b>				
Male	146 (57.25)	475 (81.62)	115 (67.25)	67 (82.72)
Female	109 (42.75)	107 (18.38)	56 (32.75)	14 (17.28)
<b>Race</b>				
White	164 (65.08)	398 (69.34)	115 (67.25)	60 (72.29)
Black	38 (15.08)	90 (15.68)	28 (16.37)	10 (12.05)
Other	50 (19.84)	86 (14.98)	28 (16.37)	13 (15.66)
<b>Education</b>				
High-school or Less	67 (26.38)	151 (26.40)	20 (11.63)	7 (8.43)
Some College	141 (55.51)	300 (52.45)	92 (53.49)	55 (66.27)
College Graduate	46 (18.11)	121 (21.15)	60 (34.88)	21 (25.30)
<b>Marital Status</b>				
Not Married	110 (43.31)	213 (36.72)	51 (29.65)	31 (37.35)
Married	144 (56.69)	367 (63.28)	121 (70.35)	52 (62.65)

*Note.* ND = Never/Non-Deployed. D = Deployed.  $N_{\text{Year-1}} = 841$ .  $N_{\text{Year-2}} = 288$ . Missing values are excluded. Non-deployed medics were not given a chance to respond to the grade/rank item in Year-2, as this variable was included in the deployment section of the survey. Information on Sex and Race was not collected in Year-2, as the values were not expected to change.

## **Behavioral Health Status**

One of the main objectives of the study was to determine the current behavioral health status of Combat Medics who had recently deployed with line units. The findings reported below were presented at the annual IPR in July 2011, and have been accepted for publication (Chapman, P., Elnitsky, C., Pitts, B., Figley, C., Thurman, R., & Unwin, B.; 2013).

### ***Mental Health***

Year-1 deployed medics were 1.75 times more likely to report a functional issue related to depression than those who had never deployed. This significant difference, however, was observed only for depression, and not stress. No significant differences in stress- or depression-related functional issues were observed between deployed and non-deployed medics in Year-2. Approximately 18-30% of all Year-1 medics indicated that they had received help from a mental health professional (within the past year), with deployed medics 1.85 times more likely to utilize assistance than those who had never been deployed. The proportion of medics indicating that they had received help from a mental health professional within the past year was 30.81% and 26.51% for the non-deployed and deployed medics, respectively. No significant differences in the utilization of a mental health professional were observed between the two deployment groups in Year-2.

In terms of mental health issues, we find significant differences between the two deployment groups. In the first year of the study, deployed medics were 2.09 and 2.24 times more likely to meet the criteria for depression and PTSD, respectively, compared to those who had never deployed. In the second year of the study, however, we find no significant differences between the two deployment groups in terms of meeting the criteria for depression or PTSD. All findings related to mental health issues remained the same when logistic regression was utilized to control for demographic characteristics. Of course, these findings are, in a way, dependent upon our choice of definition of depression and/or PTSD. The definitions utilized in this study are consistent with those found in other major studies. For depression, a cut-off score of 10 was chosen, primarily on the grounds of a statement given by the creators of the PHQ-9: "If a single screening cutpoint were to be chosen, we currently recommend a PHQ-9 score of 10 or greater, which has a sensitivity for major depression of 88%, a specificity of 88%, and a positive likelihood ratio of 7.1." The criteria for PTSD was defined as a PCL sum score at or above 50 and a positive response using the DSM scoring criteria for the PCL. This is the same definition of PTSD utilized in the MHAT studies.

Table 2

*Mental Health Outcomes by Year and Deployment Status*

Mental Health Outcome	Year-1		Year-2	
	ND	D	ND	D
Depression				
Doesn't Meet	234 (91.41)	489 (83.59)	133 (77.78)	67 (80.72)
Meets	22 (8.59)	96 (16.41)	38 (22.22)	16 (19.28)
PTSD				
Doesn't Meet	244 (96.06)	535 (91.61)	149 (86.63)	70 (84.34)
Meets	10 (3.94)	49 (8.39)	23 (13.37)	13 (15.66)

*Note.* ND = Never/Non-Deployed. D = Deployed.  $N_{\text{Year-1}} = 841$ .  $N_{\text{Year-2}} = 288$ . Missing values are excluded. PTSD = Posttraumatic Stress Disorder. Depression was measured using the PHQ-9.

PTSD was measured using the PCL.

***Perceived Stigmas and Barriers to Care***

In Year-1, Medics who met the criteria for either depression or PTSD were more than twice as likely to report concerns about being stigmatized and/or about barriers to accessing and receiving mental health services than those who did not meet the criteria—across all such items. With the exception of the item “My visit would not remain confidential,” medics who met the criteria for either depression or PTSD, in Year-2, were twice as likely (or greater) to report concerns related to stigmas and barriers to care, compared to those who did not meet the criteria. The two most commonly endorsed barriers to care among all Year-1 medics were difficulty scheduling an appointment (24.49%) and difficulty getting time off (23.19%), while the two most common stigmas endorsed were “members of my unit might have less confidence in me” (33.29%) and “my unit leadership might treat me differently” (36.86%). These same four items remained the most commonly endorsed stigmas and barriers to care among all of the medics who participated in the Year-2 survey. In the first year of the study, medics who met the screening criteria for either depression or PTSD had significantly greater endorsement across all stigmas and barriers to care, compared to those who did not meet the criteria. The same behavior—in terms of significance—was observed in Year-2, with the exception of the items “I don’t know where to get help” and “My visit would not remain confidential.”

## **Training, Deployment Preparation and Combat Experiences**

Training, deployment preparation, and combat experiences of deployed Combat Medics were analyzed and are reported in a manuscript in the appendices (Chapman, P., Cabrera, D., Varela-Mayer, C., Baker, M., Elnitsky, C., Figley, C., Thurman, R., Lin, C.D. & Mayer, P.; 2012).

### ***Deployment Training***

In Year-1, a majority of medics felt that they: were adequately trained to work the shifts required during deployment (58.1%), had all of the supplies needed to get the job done (66.8%), were given equipment that functioned the way that it is supposed to (75.5%), and received adequate training on how use the equipment (80.2%). Roughly 80% of the medics felt that they knew how to treat most animal, insect, and plant issues in the region. In terms of combat, 20.1% of the medics reported seeing as much combat as expected and 39.1% indicated that they were accurately informed about what daily life would be like during deployment. Additionally, 79.1% of medics felt that they had demonstrated success in their training during deployment.

The Year-2 responses reflect a similar pattern in terms of training. 61.0% of medics felt that they had all of the supplies needed to get the job done, while 70.7% felt that the equipment they were given functioned in the manner that it should. 75.6% stated that they had been adequately trained on how to use the equipment that they were given. 74.4% felt that they knew how to treat most animal, insect, and plant issues in the region. In terms of training related to combat, 37.8% of the medics reported seeing as much combat as expected, while 31.7% indicated that they were accurately informed about what daily life would be like during deployment. Additionally, 70.7% of medics felt that they had demonstrated success in their training during deployment. The only training item that reflected a significant change among those deployed in both years was “I saw as much combat as I expected” ( $S = 15.00$ ,  $p < .001$ ; McNemar’s test).

### ***Suicide Prevention and Stress Training***

Of the Medics surveyed in Year-1, 78.1% felt confident in their ability to identify soldiers at risk for suicide, with 73.1% indicating that the training was adequate. Roughly 90% reported being confident in their ability to help soldiers get mental health assistance, with 52.1% of medics reporting that the training was adequate. Of those surveyed in Year-2, 80.5% felt confident in their ability to identify soldiers at risk for suicide, while 72.0% indicating that the training was adequate. 87.8% reported being confident in their ability to help soldiers get mental health assistance, with 56.1% of medics reporting that the training was adequate. In terms of changes in suicide prevention training perceptions from Year-1 to Year-2, only one item significantly differed: “The training in managing the stress of deployment/combat was adequate” ( $S = 12.79$ ,  $p < .001$ ; McNemar’s test).

Information regarding mental health service utilization (within the past year) was also collected. Among the medics surveyed in Year-1, 25.0% had sought the assistance of a mental health professional, while 15.8% received assistance from a general medical doctor and 10.6% from a combat stress control professional. 11.2% were seen by Chaplains, 4.0% sought the assistance of another soldier in their unit, and 3.6% spoke with a fellow medic. Among those who responded to the Year-2 survey, 28.8% had sought the assistance of a mental health professional, 36.5% received assistance from a general medical doctor, and 7.7% consulted a combat stress control professional. 10.5% were seen by Chaplains, 5.6% sought the assistance of another soldier in their unit, and 4.9% spoke with a fellow medic.

### ***Combat Experiences***

Information on combat experiences was obtained using measures from both the DRRI and the MHAT. Almost 90% of Year-1 deployed medics went on combat patrols, and 82.9% received some type of hostile incoming fire. Roughly a third witnessed someone from their unit or an ally unit being seriously wounded or killed. While almost 20% fired their weapon at the enemy, 8.2% killed or thought that they had killed someone in battle. Of note, a large percentage of deployed medics provided aid to the wounded (82.8%), with 40.5% saving the life of a soldier/Marine. However, 52.8% of medics reported seeing injured women and children that they were unable to help. The same combat experience measures were utilized in the Year-2 survey. 89.5% of deployed medics had been on combat patrols, with 81.7% having received some type of hostile incoming fire. Almost 25.0% of deployed medics had witnessed someone from their unit or an ally unit being seriously wounded or killed. 14.6% of deployed medics had fired their weapon at the enemy, while 11.0% killed or thought that they had killed someone in battle. 68.3% of deployed medics provided aid to the wounded, with 45.1% having saved the life of a soldier/Marine. However, 34.2% of medics reported seeing injured women and children that they were unable to help.

Combat Medics that were assigned to BCTs participated in a number of soldier-centric duties such as clearing and searching homes/building (54.9%) or bunkers/caves (17.2%), disarming civilians (34.4%); being attacked or ambushed (57.8%); receiving small arms fire (52.2%); working in mined areas (72.5%); and having an IED explode near them (54.5%). Overall, 52.8% reported having a member of their unit become a casualty. Year-2 deployed medics also reported participating in a number of soldier-centric duties: 22.0% had cleared and searched homes/buildings, 14.6% had cleared and searched bunkers/caves, 18.3% had disarmed civilians, 40.2% had been attacked or ambushed, 29.3% had received small arms fire, 52.4% had worked in mined areas, and 32.9% had had an IED explode near them. 43.9% of deployed medics reported having a member of their unit become a casualty.

In addition to combat experiences, information on post-battle experiences was also collected. About half of the deployed medics saw civilians (52.4%), soldiers or allies (48.9%) or enemy combatants (41.4%) severely wounded or disfigured in combat. Many medics cared for the injured or dying (76.5%), while 44.8% were exposed to the sight, sound, or smell of dying men and women. In terms of death, 38.6% of medics reported seeing the bodies of dead civilians, with 35.8% had seen the bodies of dead enemy soldiers; 33.5% had seen the bodies of deceased soldiers/allies. The Year-2 survey also included post-battle experience items. The deployed medics saw a number of individuals wounded or disfigured in combat: civilians (30.5%), soldiers or allies (42.7%), and enemy combatants (32.9%). 53.7% had taken care of injured or dying people, while 34.2% were exposed to the sight, sound, or smell of dying men and women. In terms of death, 26.8% of medics reported seeing the bodies of dead civilians, with 26.8% had seen the bodies of dead enemy soldiers; 29.3% had seen the bodies of deceased soldiers/allies.

### **Predicting Behavioral Health Outcomes**

The second major objective of this study was to predict behavioral health outcomes by identifying the relevant risk/protective factors associated with enhanced/diminished mental health issue endorsement. This objective was accomplished through the use of the logistic regression model selection procedures available in SAS (Version 9.3). Depression and PTSD—defined as in Table 2—were entered as response variables (separately), with mental health issue endorsement as the probability being modeled. The predictors entered into the selection process for all medics in the study were: gender, age, grade/rank, race, marital status, education, unit and personal morale, any mental health service utilization, family concerns, dispositional resilience, officer and NCO perceptions, and cohesion and confidence. In addition to the predictors included for all medics, the selection process for the deployed medics included deployment perceptions, deployment concerns, combat experiences, post-battle experiences, training and deployment preparation, and unit support. The model selection procedure consisted of (1) including all possible predictors and using the backward selection method to select significant predictors; (2) refitting the model with only the significant predictors included; (3) excluding any predictors that failed to reach significance in the refit; (4) continuing the refit(s) until all predictors included are significant; and (5) determining which predictors are risk/protective factors based on increased/decreased likelihood of mental health issue endorsement.

The risk factors for depression among Year-1 deployed medics included mental health service utilization, age, and family concerns; while protective factors included marital status (married), education (more education), personal morale (higher morale), and dispositional resilience. Among this same group, the risk factors for PTSD included mental health service utilization, deployment concerns, and family concerns; while protective factors included dispositional resilience and NCO perceptions. Among Year-1 medics that had never been deployed, the risk factor for depression was family concerns, while the protective factor was personal

morale (higher morale). For PTSD, the risk factor was mental health service utilization, and the protective factor was dispositional resilience.

The results for the second year of the study display a somewhat different pattern. The risk factor for depression among the deployed medics was mental health service utilization, and the protective factor was dispositional resilience. The risk factors for PTSD among the deployed medics in Year-2 were deployment concerns and combat experiences; the protective factors were deployment perceptions and confidence. Among non-deployed medics in Year-2, the risk factor for depression was family concerns; the protective factors were personal morale (higher morale) and dispositional resilience. For stress, the risk factors were grade/rank (higher rank) and mental health service utilization; the protective factor was personal morale (higher morale).

## **LOGISTICAL AND ADMINISTRATIVE MATTERS**

1. A modification to the BAMC IRB was submitted by the Military PI, allowing for the inclusion of an additional medic mettle scale (in development) to the Year 2 on-line survey. Originally, the development of this scale was to be conducted via focus groups. After conversing with the Military PI about the importance of utilizing focus groups rather than sending the 127-item scale to all 841 Soldiers in the study, the Military PI insisted that this be conducted online and sent to all 841 Soldiers. As the length of the main survey for which this study was funded already provides a possible challenge (due to participant burden), the items were included as a separate online survey. Updates for this online survey have been provided to the Military PI.
2. Military PI was KIA in Kabul in October 2011. COL Brian Unwin was tapped as Military PI.
3. Wwith the retirement of COL Unwin, we have been assigned our 3<sup>rd</sup> Military PI. CPT Dale Russell.

## **KEY RESEARCH ACCOMPLISHMENTS**

- A methodology template was created to streamline the publication process
- Year 1 data collection and analysis completed.
- Year 2 data collection completed and cleaned. MS being considered.
- Presentations, publications and abstracts listed below



## **REPORTABLE OUTCOMES**

### **Manuscripts**

- Chapman, P., Elnitsky, C., Pitts, B., Figley, C., Thurman, R., & Unwin, B. (2013). Mental Health, Help-Seeking, and Stigma and Barriers to Care among 3- and 12-Month Post-Deployed and Never-Deployed U.S. Army Combat Medics. *Military Medicine*, Accepted.
- Chapman, P., Elnitsky, C., Pitts, B., Figley, C., Thurman, R., & Unwin, B. (2013). Posttraumatic stress, depression, stigma and barriers to care among U.S. Army healthcare providers. *Traumatology*, Accepted.
- Chapman, P., Cabrera, D., Varela-Mayer, C., Baker, M., Elnitsky, C., Figley, C., Thurman, R., Lin, C.D. & Mayer, P. (2012). Training, Deployment Preparation, and Combat Experiences of Deployed Health Care Personnel: Key findings from deployed U.S. Army Combat Medics assigned to line units. *Military Medicine*, 177(3), 270-277.

### **Manuscripts in Review**

- Pitts, Chapman, Safer, Unwin, Figley, & Russell (in review). Killing Versus Witnessing Trauma: Implications for the Development of PTSD in Combat Medics. *Military Psychology*.
- Chapman, P., Elnitsky, C., Pitts, B., Figley, C., Thurman, R., & Unwin, B. (in review). Mental Health, Stigma and Barriers to Care among U.S. Army Combat Medics. *Journal of Traumatic Stress*.

### **Interviews**

- Robbins, S., & Beardsley, S. (2011, September 16). Study Looks at Psychological Effects Suffered by Combat Medics: Interview with Paula Chapman, Ph.D. *Stars and Stripes*. Retrieved from <http://www.stripes.com/news/study-looks-at-psychological-effects-suffered-by-combat-medics-1.155272>
- Tozer, J. (2011, July 25). Medical Monday: Care for the combat medic. *Research Spotlight for DoD Live*. Retrieved from <http://www.dodlive.mil/index.php/2011/07/care-for-the-combat-medic/>
- VA Research Currents (2011, May) Caring for the Medic: Interview with Paula, Chapman, Ph.D. *VA Research Currents Research News from the U.S. Department of Veterans Affairs*. Retrieved from <http://www.research.va.gov/currents/may-june11/may-june11-03.cfm>

### **Poster Presentations**

Pitts, B., Thurman, R., Varela, C., Chapman, P. (2011, November). *The soldier Medic Mettle Study: Perceptions of training and combat experiences*. Poster presented at the 19<sup>th</sup> Annual Poster Session of Association of Military Surgeons of the United States, San Antonio, TX.

Varela, C., Thurman, R., Pitts, B., Chapman, P. (2011, November). *Stigma and barriers to care among Army combat medics*. Poster presented at the 19<sup>th</sup> Annual Poster Session of Association of Military Surgeons of the United States, San Antonio, TX.

### **Symposium Oral Presentations**

Chapman, P., Maiers, A., Mayer, P., Baker, M., & Escolás, S. (2010, December). Resilience and behavior health of combat medics. In J. Evans, K. Roberts & J.E. Gorman (Chairs), *3<sup>rd</sup> Annual Trauma Spectrum Conference*. Symposium conducted at the meeting of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DcoE), National Institutes of Health, and the Department of Veterans Affairs (VA), Bethesda, MD.

Figley, C., Cabrera, D., & Chapman, P. (2010, November). An investigation into the factors predicting resilience among combat medics between deployments: Preliminary findings. In J. Bisson & N. Roberts (Chairs), *ISTSS 26<sup>th</sup> Annual Meeting*. Symposium conducted at the meeting of International Society for Traumatic Stress Studies, Quebec, Canada.

Figley, C., Cabrera, D., Pitts, B., & Chapman, P. (2011, November). Saving not taking lives: Measuring combat medic mettle. In C. Jackson & B. Stolbach (Chairs), *ISTSS 27<sup>th</sup> Annual Conference*. Symposium conducted at the meeting of International Society for Traumatic Stress Studies, Baltimore, MD.

Maiers, A., Mayer, P., Baker, M., Escolás, S., & Chapman, P. (2011, March). Research with psychological risk and resiliency factors of combat medics and corpsmen. In C. Engel & C. O'Hara (Chairs), *2011 Armed Forces Public Health Conferences Partners in Prevention*. Symposium conducted at the meeting of U.S. Army Public Health Command and Navy & Marine Corps Public Health Center, Newport News, VA.

### **Funding Applied for Based on Work Supported by this Award**

Based on Year 1 preliminary findings, a pilot grant to assess personality characteristics of in-coming medics was funded. A BAA will be submitted to follow these medics.

### **Employment or Research Opportunities Applied for and/or Received Based on Experience/Training Supported by this Award**

None at this time

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